THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

072

ARCHITECTURAL DRAUGHTING

(For Both School and Private Candidates)

Time: 3 Hours **Friday, 06th November 2015 p.m.**

Instructions

1. This paper consists of sections A, B and C.
2. Answer **all** questions in sections A and B, and **two (2)** questions from section C.
3. Drawings should be in pencil and all drawings in section C should be prepared in **A3 Standard Paper** format.
4. Calculators and cellular phones are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

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SECTION A (20 Marks)

Answer **all** questions in this section.

1. For each of the items (i) – (x), choose the correct answer from among the given alternatives and write its letter beside the item number in the answer booklet provided.

(i) It is important to consult the client exhaustively on his/her wishes so as to avoid
- A condition of engagement and excessive scale of professional charges
- B slower and unorganised work on part of the architect
- C final details and cost becoming evident on the completion of building
- D rushed preparation and insufficiently detailed scheme going to tender
- E insufficient preparation for contractors in the office and at site.

(ii) The foundation plan is used to determine
- A horizontal roofing overhang
- B depth of excavation
- C size and location of walling
- D vertical assembly dimension
- E length and width of excavation.

(iii) Sectional drawings prepared for specific parts of a building are known as
- A detailed
- B full scaled
- C detached
- D removed
- E revolved

(iv) A well designed stair should comply with the following requirement:
- A Doors should be situated about 310mm from stair
- B Pitch should not exceed 25^0
- C Well lighted especially at turnings
- D Width not exceeding 915 mm
- E Winders to be provided at head if unavoidable.

(v) The purpose of brick jambs on either side of a fireplace is
- A to provide smooth outlet allowing smoke to rise freely
- B to contain fuel of fireplace below the burning chamber
- C to gather and pass combustion products outside
- D to provide platform for burning fuel to heat a house
- E to contain fire and support chimney breast.

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(vi) The three main types of water sources are:

A Bottle water, bowser water, piped water
B Bottle water, tank water, piped water
C Direct water, indirect water, piped water
D Rain water, upland surface, underground water
E Rain water, spring water, lake or river water.

(vii) Subsoil drainage is the provision of

A agricultural pipes for irrigating soil in arid climates
B ditches for the purpose of removing water from paved areas
C agricultural pipes for the purpose of removing water from logged soil
D drain pipes for the purpose of spreading drain water in to soil
E ditches for the purpose of removing water from unpaved areas.

(viii) What is "schedule" in architectural business?

A Brief description of materials used.
B Descriptive chart of materials and products.
C Compilation of details and tools.
D List of construction details and products.
E Table of descriptive construction notes.

(ix) One of the purpose of building specifications is to

A be used for several house designs in the same site
B convey all information not shown in the drawing about building
C provide designer with overview of similar parts in the building
D show width, height, material of windows, doors and wall of residency
E simplify purchasing of material through different suppliers.

(x) Schedules are usually supplied by the:

A General Forman B Quantity surveyor C Building owner
D Site engineer E Architect.

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2. Match the meaning of stair case items in **List A** with the responses in **List B** by writing the letter of the correct response beside the item number in the answer booklet provided.

List A	List B
(i) The portion of stair which permits ascent and descent.	A Header
(ii) No-slip strip inserted across the tread.	B Run
(iii) Vertical portion of a step providing support to the tread.	C Soffit
(iv) Wooden piece fastened to the carriage to support the treads.	D Nosing
(v) Vertical distance between two successive tread faces.	E Scotia
(vi) The level platform at the top or bottom of a flight between floors.	F Headroom
(vii) The horizontal distance between two successive tread faces.	G Going
(viii) The projecting part of the tread beyond the vertical face.	H Landing
(ix) The degree of sloping of a stair to another floor.	I Rise
(x) The inclined surface underside the stair case.	J Step
	K Checkered grooves
	L Cleat
	M Winder
	N Riser
	O Pitch

SECTION B (40 Marks)

Answer **all** questions in this section.

3. List four characteristics considered for a quality tracing paper.

4. Mention the four classifications of letters as applied in lettering.

5. (a) What is the site plan?
   (b) Briefly explain the function of "beacon" in the site plan.

6. Outline the four basic steps followed in the construction of a framed, braced and battened door.

7. Write down four principles applied when locating septic tank to a building area.

8. (a) What is the importance of building specifications to the construction team?
   (b) Mention four issues that are described in building specifications.

9. Draw the symbol for the following electrical components:
   (a) One way switch single pole.
   (b) Two way switch single pole.
   (c) Distribution fused board with switches (lighting).
   (d) Distribution fused board without switches (lighting).

10. (a) What are the standard colour codes for electric wires.
    (b) What does earthing do?

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11. (a) What is the main purpose for presenting the schedule for working drawing (production drawing).

(b) What is the important use of door and window schedules in building construction?

12. (a) What is the reason for curing concrete floor slab for seven days.

(b) How is a wet concrete consolidated and cured.

SECTION C (40 Marks)

Answer **two (2)** questions from this section.

13. (a) (i) What is "perspective" as applied in architectural drawing?

(ii) What are the five key concepts of architectural perspective?

(iii) What is the base of categorization of perspective drawing?

(iv) Illustrate three basic categorization of perspective drawing in architectural draughting. **(11 marks)**

(b) State by using illustrative sketches on the size of an image formed when an object is placed in the following positions: **(09 marks)**

(i) In front of the picture plane.

(ii) In the picture plane.

(iii) In the back of the picture plane.

14. (a) Enumerate four general classes of architectural drawing. **(02 marks)**

(b) Briefly explain the general classes of architectural drawing mentioned in part 14 (a). **(16 marks)**

(c) What are the main causes of changes occurring on design and appearance of buildings through the ages? **(02 marks)**

15. The following are detail of a straight flight timber staircase. Total going is 380 mm, total rise is 2700 mm, going of the step is 250 mm and rise of a step is 180 mm. The width of stair which is also the width between two walls in which the balustrade is fixed in 1200 mm.

Draw;

(a) The plan of stair. **(05 marks)**

(b) Sectional elevation of a stair with well labelled parts. **(15 marks)**

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